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## STUDIES OF PERUVIAN BIRDS. NO. XLVII<sup>1</sup>

### THE GENUS *TANGARA*. PART 2

By JOHN T. ZIMMER

Names of colors are capitalized when direct comparison has been made with Ridgway's "Color standards and color nomenclature."

#### *Tangara ruficervix fulvicervix* (Sclater and Salvin)

*Calliste fulvicervix* SCLATER AND SALVIN, 1874, Proc. Zool. Soc. London, p. 354, pl. 30, fig. 1—Tiltilo, prov. Yungas, Bolivia; [♀]; British Mus.

There seems to be no distinction in birds from the Chanchamayo Valley and those from the Urubamba Valley. I have no Bolivian material but other authors have found no certain distinctions. Hellmayer (1936, Field Mus. Nat. Hist. Publ., zool. ser., vol. 13, pt. 9, p. 133, footnote) comments on a Bolivian male as being more intensely blue than Peruvian males and as having the orange-rufous occipital band wider. In this particular, the Peruvian birds at hand show considerable individual variation, including a width of the occipital band sometimes twice as much as it is in other examples.

Peruvian records of *fulvicervix* are from Paltaypampa, Ropaybamba, Garita del Sol, San Miguel Bridge, Ocobamba [Ocobamba], Santa Ana, and Marcapata.

The north-Peruvian population, heretofore usually referred to *T. r. taylori*, is recognizably distinct from three examples of *taylori* from eastern Ecuador and may be known as follows.

#### *Tangara ruficervix amabilis*, new subspecies

TYPE: From Uchco, about 50 miles east of Chachapoyas, northern Perú; altitude 5000 feet. No. 235263, American Museum of Natural History. Adult male collected October 28, 1925, by Harry Watkins; original No. 9798.

DIAGNOSIS: Similar to *T. r. taylori* of eastern Ecuador but with the fore part of crown lighter, less violaceous blue and the occiput more deeply orange-hued; blue of anterior and lateral under parts slightly purer (less greenish) blue.

RANGE: Northern Perú; Subtropical Zone.

DESCRIPTION OF TYPE: Broad frontal band, lores, a narrow circumocular ring, malar apex, and chin black; anterior part of crown Yale Blue × Olympic Blue with a narrow extension of this color posteriad over the circumocular ring; a black bar crossing the crown connected very narrowly with the circumocular ring; back of head Deep Chrome × Capucine Yellow, the color invading the upper auriculars; nape black with the posterior feathers finely tipped with violaceous blue; back near Cendre Blue (bluer toward light), with the feathers of the mantle broadly centered with dusky, giving a mottled appearance. Throat a little darker than Light Cerulean Blue; breast, sides, and flanks approaching Cendre Blue; belly and under tail-coverts light ochraceous buff, tending toward whitish anteriorly. Wings black, all remiges (except the outermost primary) and the upper wing-coverts edged with Cendre Blue, but tips of primaries not margined; under wing-coverts white except along

<sup>1</sup> Earlier papers in this series comprise American Museum Novitates, nos. 500, 509, 523, 524, 538, 545, 558, 584, 646, 647, 668, 703, 728, 753, 756, 757, 785, 819, 860, 861, 862, 889, 893, 894, 917, 930, 962, 963, 994, 1042, 1043, 1044, 1045, 1066, 1095, 1108, 1109, 1126, 1127, 1159, 1160, 1168, 1193, 1203, 1225, and 1245.

carpal margin where the feathers are blackish with blue margins. Tail largely black; median rectrices faintly tinged with dark blue and outer margins of all but external pair near China Blue. Bill (in dried skin) black; feet dull brownish. Wing, 77 mm.; tail, 50; exposed culmen, 9; culmen from base, 12; tarsus, 17.

REMARKS: Female similar to the male but blue of crown and under parts a little more tinged with green; light tips on hind neck duller and slightly more greenish; mantle with blue edges narrower and duller; size (one specimen) at minimum of that of the males; wing, 74 mm.; tail, 46 (males: wing, 74-82; tail, 48-54).

Hellmayr (1936, Field Mus. Nat. Hist. Publ., zool. ser., vol. 13, pt. 9, p. 132, footnote) comments on a bird of unknown sex from Nuevo Loreto, Perú, which differed from a male of *taylori* from Machay, Ecuador, in the color of the coronal area, much as shown by the present series of *amabilis* in comparison with east-Ecuadorian birds. Hellmayr describes the occipital band as only half the width of that of *taylori*, but this character is not shown by the skins of *amabilis* at hand, although the width of the band is a little less than in *taylori*. The size of the Nuevo Loreto specimen (wing, 70; tail, 45) is smaller than that of any of my specimens of *amabilis* but about what might be expected as a minimum for the females, comparing the range of variation in the males. In the absence of material from Nuevo Loreto, therefore, I assign the record from that locality to *amabilis*. It certainly is not the adjacent form to the southward, *fulvicerix*, although possibly showing a trend in that direction, especially in respect to the narrow occipital band.

In the course of the study of the present form, I examined a series of birds from Colombia and western Ecuador, usually referred to *T. r. ruficervix*. Chapman (1926, Bull. Amer. Mus. Nat. Hist., vol. 55, p. 662) called attention to the longer bills of west-Ecuadorian birds, and the additional material now at hand from that region amply confirms this observation. In addition, it is possible to show a somewhat shorter wing and tail in the Ecuadorian

specimens. The figures obtained are given below. I have used the bill from nostril as a measurement that is more accurately determinable than either the exposed culmen or the culmen from base, although it is shorter, of course, than either and hence does not show so great a distinction.

	COLOMBIA	W. ECUADOR
♂ Wing,	75.5-78.3 (77.6)	67.0-74.3 (70.9)
Tail,	45.3-52.0 (48.4)	42.0-45.0 (42.9)
Bill,	6.8-7.1 (7.0)	7.8-8.5 (8.0)
♀ Wing,	70.0-72.5 (71.7)	68.0-70.0 (68.8)
Tail,	44.0-47.9 (46.1)	41.0-42.0 (41.5)
Bill,	7.0-7.5 (7.1)	7.9-8.2 (8.0)

The name proposed by Sclater for an Ecuadorian bird erroneously identified by Bonaparte as "*Procnopis atrocoerulea*" is available for the west-Ecuadorian form of the present species which is thus entitled to the name *leucotis*. The name, unfortunately, is misleading, although not actually a misnomer. Various specimens from both Ecuador and Colombia show the upper margin of the auriculars whitish or even tinged with orange-rufous. *T. r. leucotis* does not reach Perú.

A male and female from Cerro Munchique, southwestern Colombia, are of doubtful assignment. They have the long bill of *leucotis* but the long wing and tail of *rufivertex* and hence may, with equal justification, be referred to either. Additional material from this part of Colombia may show a predominance of characters in one direction or the other, but since separation from *rufivertex* is not clearly indicated in these two examples, I prefer to leave them with *rufivertex*. On account of the uncertainty of reference, I have not included their measurements in the table given above. The male has the wing, 76; tail, 47; bill from nostril, 7.8; female, wing, 71.1; tail, 45; bill from nostril, 7.8.

#### SPECIMENS EXAMINED

##### *T. r. ruficervix*.—

##### COLOMBIA:

- La Candelaria, 1 ♂;
- east of Palmira, 1 ♂, 1 ♀;
- El Roble, 1 ♂, 1 ♀;
- Fusugasugá, 1 ♂, 1 ♀;
- "Bogotá," 7 (?);
- Aguadita, 1 ♀;
- near San Augustin, 1 ♂;
- Ricaurte, 2 (?);

San Antonio, 3 ♂, 2 ♀, 1 (?);  
 Concordia, 1 (?);  
 Zapata River, 1 ♂;  
 Río Lima, 1 ♂, 1 ♀;  
 Cerro Munchique, 1 ♂, 1 ♀.

*T. r. leucotis*.—

ECUADOR:

San Nicolás, 1 ♂, 1 ♀;  
 Santo Domingo, 1 ♀;  
 Gualea, 3 ♂, 1 (?);  
 Cayandeled, 1 ♂;  
 Bobonaza, 1 (?);  
 Guanacillo, 2 ♂;  
 Zaruma, 1 ♀;  
 El Chiral, 1 ♂.

*T. r. taylori*.—

ECUADOR:

Oyacachi, 1 ♀;  
 (unspecified), 2 [♂?].

*T. r. amabilis*.—

PERÚ:

Uchco, 2 ♂ (incl. type);  
 Chaupé, 5 ♂, 1 ♀.

*T. r. fulvicerix*.—

PERÚ:

Chanchamayo, 2 ♂, 1 ♀;  
 Utcuyacu, 2 ♂;  
 Idma, 16 ♂, 5 ♀;  
 Cosñipata, 1 ♂.

**Tangara mexicana boliviana**  
 (Bonaparte)

*Callospiza boliviana* BONAPARTE, 1851, Compt. Rend. Acad. Sci., Paris, vol. 32, no. 3, p. 80—  
 "Guarajos" [= Guarayos], Bolivia; Paris Mus.

I can detect no essential distinctions among birds from Bolivia, Perú, Ecuador, and Colombia. A certain amount of apparent variation in the prominence of the black spotting of the lateral under parts is more apparent than real and depends in large part on the "make" of the skin. Even if a slight amount of differentiation should exist in this particular, its detection would be difficult in view of the wide range of preparation from the hands of numerous collectors.

Peruvian records of *boliviana* are from Pebas, Iquitos, Río Javari [Brazil?], Moyobamba, Tarapoto, Yurimaguas, La Merced, Chanchamayo, and Yahuar Mayo. Sclater (1851, Contrib. Ornith., p. 69) says that specimens in the British Museum, marked "(1843) 5, 24, 94" were said to be from Lima, but no further mention was ever made of them, so far as I can determine, and the locality is too improbable for this species to bear serious consideration.

Specimens from the upper Amazon, as far eastward as the west banks of the Madeira and the Negro, may be assigned to *boliviana* without much difficulty, although there is a slight trend toward a paler tint of yellow on the belly and, less commonly, a suggestion of a greener tone of blue on the shoulder in the easternmost examples.

Beyond the mouths of these rivers, to the eastward, there is a most interesting situation. On the right bank of the Madeira and eastward to the Tapajoz, the birds show the belly distinctly lighter yellow and the shoulder always more greenish than in true *boliviana*, either uniformly more greenish or with a portion of the area noticeably so. Very rarely is the shoulder as clear blue as in skins from west of the Madeira which, in turn, are not so blue as birds from Bolivia or Perú. On the Xingú, the divergence from *boliviana* is even more marked; the shoulder sometimes is pronouncedly greener than the head, the belly sometimes is only lightly tinged with yellow, about as in *vieilloti*, and these two characters may be found singly or together.

The nearest approach to the Xingú birds is found across the Amazon at Faro, on the Rio Jamundá. In this region, the color of the shoulder reaches an extreme of greenness found only in Guianan *mexicana*, although the average *mexicana* is greener than Faro birds, and no *mexicana* examined has so pronounced yellow on the belly as half of the Faro specimens at hand; the other Faro birds have only a tinge of yellow on the belly like some of the Xingú specimens.

Leaving the Xingú-Faro focus, three birds from Manaos show a trend again toward *boliviana* which occurs on the right bank of the Negro; and again, farther upstream but still on the left bank, at São Gabriel, the birds are intermediate between *boliviana* and *mexicana*.

South of the mouth of the Amazon, on the Tocantins and in the Pará district, the population is very like that at São Gabriel, and in some respects appears even closer to *boliviana* than to the Tapajoz birds, in spite of the interposition of the strongly marked Xingú population.

It seems likely that *mexicana* developed in the Guianas and *boliviana* in the Andean

region, possibly at a time when the Amazon Valley was occupied by an arm of the sea, and that their subsequent history has been one of contact and imperfect isolation. Certainly, the nearest approach to the characters of *mexicana* is found at Faro, the point geographically closest to the Guianas, and the nearest approach to the characters of *boliviana* is at points closest to the range of that form except for the Tocantins-Pará population. This Tocantins-Pará population may represent a portion of the original south-bank Amazonian population of *boliviana* somewhat removed from the influence of intruding *mexicana* and still retaining a large part of its original character. It is not impossible that it may still be connected directly with *boliviana* across the headwaters of the Xingú and Tapajoz rivers, from which no material is available to settle the point.

The nomenclatural disposition of the lower Amazonian birds offers a puzzling problem. Mr. Todd has applied the name "*lateralis*" to the birds from the Rio Tapajoz (1922, Proc. Biol. Soc. Washington, vol. 35, p. 91—Apacy, Rio Tapajoz), and there is no doubt that it is possible to distinguish the Tapajoz birds from *boliviana* and from *mexicana*. The problem then arises as to what to do with the Xingú and Faro birds and with all the other various degrees of intermediacy between *boliviana* and *mexicana*, no two of which are alike. I believe it is best, in view of the progressive intermediacy exhibited in the different parts of this whole central area, to consider the population as a whole as an intermediate one, still unstable although in process of crystallization. For this population a trinomial subspecific name is hardly applicable although, if one is demanded, "*lateralis*" is available.

The southeast-Brazilian *brasiliensis* duplicates the pattern of the *mexicana* group with alteration only in the hue of blue on those parts of the plumage that are blue, with the belly purer white than in typical *mexicana*, and with the measurements averaging greater. The range is isolated from that of the *mexicana* group, at least as far as known, and there is no trace of intermediacy observable in either stock.

Nevertheless, I believe the relationship is sufficiently close to warrant the use of a trinomial, with the added advantage of indicating the affinity of *mexicana* and *brasiliensis* in distinction from the other members of the genus *Tangara*.

## SPECIMENS EXAMINED

*T. m. mexicana*.—

## FRENCH GUIANA:

Cayenne, 3 ♂, 1 ♀, 1 (?);  
Mana, 2 ♂, 1 ♀.

## DUTCH GUIANA:

Paramaribo, 2 ♂, 3 (?);  
near Paramaribo, 3 ♂, 2 (?);  
Kwata, 1 ♂;  
Albina, 1 ♀;  
Saramacca District, 1 ♂;  
"Surinam," 1 ♂.

## BRITISH GUIANA:

Tumatumari, 3 ♂.

*T. m. media*.—

## VENEZUELA:

(Perico, Maipures, La Unión, La Prición,  
Maripa, Suapure, and Guanoco), 10 ♂,  
5 ♀, 1 (?).

*T. m. vieilloti*.—

## TRINIDAD:

(Princetown, Carenage, Heights of Aripo,  
Valencia, Seelet, Savana Grande, Caparo,  
Casparillo, and "Trinidad"), 32 ♂, 19 ♀,  
2 (?).

*T. m. boliviana*.—

## BOLIVIA:

Todos Santos, 1 ♂;  
Mission San Antonio, 1 ♀;  
mouth of Río San Antonio, 1 (?);  
Yungas, 1 (?);  
Prov. Sara, 2 ♂.

## PERÚ:

Astillero, 4 ♂;  
Perené, 1 ♂;  
upper Ucayali, 2 ♂;  
lower Ucayali, 1 ♀;  
Ucayali, 1 ♂;  
Sarayacu, 2 ♂, 2 ♀;  
Puca Curo, 1 ♂;  
Apayacu, 1 ♂, 1 ♀;  
mouth of Río Curaray, 1 ♀;  
mouth of Cinipá, 1 ♀;  
Pomará, 2 ♂;  
Río Seco, 2 ♂;  
Río Negro, 2 ♀;  
Loretoyacu, 1 ♂.

## ECUADOR:

Macas, 1 ♂;  
Río Suno, above Avila, 1 ♂;  
Jiputini, 1 ♂, 1 ♀;  
Napó, 2 (?);  
"headwaters of Marañón," 1 (?);  
"Ecuador," 1 (?).

## COLOMBIA:

La Morelia, 2 ♀;  
"Bogotá," 4 (?).

## BRAZIL:

- Teffé, 3 ♂, 2 ♀;  
 Rio Madeira, Rosarinho, 8 ♂, 4 ♀, 2 (?);  
 Calamá, 1 ♀;  
 Rio Preto, Santa Isabel, 1 ♂, 1 ♀;  
 Rio Negro, Igarapé Cacao Pereira, 2 ♂.

*T. m. mexicana* × *boliviana*.—

## BRAZIL:

- Rio Madeira, Borba, 1 ♂, 2 ♀;  
 [opposite] Marmellos, 1 ♂;  
 Villa Bella Imperatriz, 6 ♂, 4 ♀;  
 Rio Tapajoz, Tauary, 2 ♂, 1 ♀;  
 Aramanaý, 1 ♂;  
 Piquiatuba, 1 (?);  
 Santarem, 1 ♀;  
 Rio Xingú, Porto de Moz, 2 ♂, 3 ♀;  
 Tapará, 2 ♂, 1 ♀;  
 Cussary, 1 ♀;  
 Rio Majary, Recreio, 1 ♂;  
 Rio Tocantins, Baião, Pedral, 1 ♂;  
 Arumatheua, 1 ♂;  
 Mocajuba, 1 ♀;  
 Pará, 1 ♂, 1 ♀;  
 Utinga, 1 ♂;  
 Faro, Castanhal, 1 ♂, 1 ♀;  
 Maracanã, 4 ♂, 1 ♀;  
 San José, 1 ♀;  
 Rio Negro, Manaos, 1 ♂, 1 ♀;  
 São Gabriel, 6 ♂, 2 ♀.

*T. m. brasiliensis*.—

## BRAZIL:

- Rio de Janeiro, La Raiz, 1 ♂, 1 [♀?];  
 "Rio Janeiro," 1 (?);  
 "Bahia," 1 (?);  
 Espirito Santo, Lagôa Juparaná, 11 ♂, 2 ♀;  
 "Brazil," 17 (?).

**Tangara gyrola catharinae** (Hellmayr)

*C[alospiza] gyroloides catharinae* HELLMAYR, 1911, Proc. Zool. Soc. London, p. 1106—Chaquimayo, Carabaya, southeastern Perú; ♂; Munich Mus.

With the exception of the birds from the extreme northeastern part of the country, all Peruvian examples appear to be referable to the same form, to which the name *catharinae* is applicable. The northeastern birds belong to an undescribed form, an account of which is given below.

Records of *catharinae* from localities from which no material has been examined in the present connection are from Chaquimayo, Yahuarimayo, Saniaca, Marcapata, Chanchamayo, Huambo, Huayabamba [Valley], and Charapi.

There is some doubt about the possible application of the name "*gyroloides*" of Lafresnaye, based on Swainson's description of "*Aglais Peruviana*" in his "Animals in menageries," page 356, 1837 (preoccupied). The specimen described by Swain-

son is said to be from Perú and in the W. Hooker collection. Other birds described by Swainson with the same origin have been found to occur in northern Perú near the middle Marañón, and the original examples of some of them have been found in Liverpool or Cambridge, England. Mr. Kinnear was unable to find the original of "*Aglais Peruviana*" in either place, as reported by Hellmayr (1936, Field Mus. Nat. Hist. Publ., zool. ser., vol. 13, pt. 9, p. 143, footnote 2), and the description is of doubtful application. In the first place, Swainson compares his bird with the species discussed immediately preceding it, but the comparative characters obviously refer to the succeeding species. Secondly, the details of coloration are in decided disagreement with those of any form known to occur in Perú, including birds from the area where Hooker's collection appears to have been made (by Andrew Mathews). Swainson insists on the green, not yellow, shoulder and calls attention to the yellow collar on the hind neck as being, inferentially, comparable to that in "*chrysoptera*" = *gyrola*. The name "*gyroloides*" was applied for many years to the Colombian bird now known as *deleticia*, and the reference to Perú was considered as erroneous. The yellow collar is obsolete in *deleticia*, however, and only rarely exceeds an inconspicuous yellow tinge, in consequence of which this application of the name is very doubtful, as concluded by Hellmayr. It is not impossible that Swainson's example was a Peruvian specimen of the bird now known as *catharinae* with the shoulder area concealed by imperfect preparation of the skin; I have a specimen in which such a possibility is suggested. There is no proof of this, nevertheless, and until the original example of "*Peruviana*" comes to light, the case must be left in abeyance and *gyroloides* considered as unidentifiable.

*T. g. nupera* of western Ecuador and southwestern Colombia comes very close to the Peruvian boundary but has not yet been found across the border.

**Tangara gyrola parva**, new subspecies

TYPE: From Mt. Curycuryari, Rio Negro, Brazil; altitude 500 feet. No.

311447, American Museum of Natural History. Adult male collected August 26, 1921, by the Olalla brothers.

DIAGNOSIS: Similar to *T. g. catharinae* of the eastern slope of the Eastern Andes from Bolivia to Colombia, but wing and tail shorter; adult males with brown of cap averaging darker; yellow of collar and shoulder slightly lighter; blue of rump and under parts and green of back averaging a little lighter.

RANGE: Upper portion of the Rio Negro in Brazil, the Cassiquiare in southern Venezuela; the Putumayo in extreme southeastern Colombia, and extreme northeastern Perú; possibly the upper Amazon in western Brazil (Teffé).

DESCRIPTION: The similarity to the coloration of *catharinae* is so marked that no details need be given. When examined in series, the slight distinctions in average color, noted in the diagnosis, may be detected, but there are too many exceptions to make the feature of any service. The type shows the following measurements: wing, 69 mm.; tail, 46; exposed culmen, 9.4; culmen from base, 14.2; tarsus, 16.

A series of 17 adult males shows the following range of measurements of the wing and tail: wing, 67–73, average, 70.3; tail, 43.5–49, average, 45.2. In contrast, 39 males from the Andean slopes and valleys measure: wing, 72–79, average, 75.1; tail, 45.5–54.3, average, 49.3. Actually, only one male from the range of *parva* has the wing 73 and only one male from the restricted range of *catharinae* has the wing below 73; only one male of *parva* has the tail over 47 mm. in length and only one of *catharinae* has it below 47. There is thus little overlap in this particular. Contributory evidence is supplied by Hellmayr (1911, Proc. Zool. Soc. London, p. 1106) in the measurements of three males from Marabitanas and the Rio Xie, Brazil (wing, 70–72; tail, 47–49.5), and two from the Putumayo, southeastern Colombia (wing, 70.5–71; tail, 49–50). Ten males from “Bogotá” and from northern, central, and southern Perú are reported by Hellmayr as having the wing 73–77, and the tail 48–54. The correspondence to the meas-

urements of the birds that I have examined is quite evident.

Sclater, in the “Catalogue of birds in the British Museum,” lists a young example of the species from Ega [= Teffé], but recent collectors appear not to have found any representatives of the group that far downstream on the Amazon. If the locality is correct (the British Museum skin was purchased and no collector is cited), it might conceivably belong to *parva* which is geographically nearest to Teffé.

I am uncertain of the disposition of four birds from the mouth of the Curaray in northeastern Perú. All are sexed as females, although I have some doubts of the correctness of the determination of some of them. I have not yet been able to find good characters for the distinction of adult females and young males and hence have been unable to use the measurements of supposed females as a criterion for the separation of *parva* and *catharinae*. In consequence, the Curaray specimens remain indeterminable. From the geographic position of the locality, well away from the Andean slope and relatively close to Apayacu, I should expect *parva* to be the form found at that place. Assignment is made to *parva* with a query.

A somewhat similar distinction is found in the series of *T. g. gyrola* between the birds from Mt. Roraima and Mt. Auyan-tepui and those from the lowland localities in the Guianas. The males from the lowlands have the wing, 69.8–72.7 (average, 72.1); the tail, 42.8–47 (average, 45.6). The mountain male birds have the wing, 75.1–76.4 (average, 75.5); tail, 47.6–51 (average, 49). A single exception is an Auyan-tepui “♂” with wing, 71.3; tail, 48.2. I can find no distinction in coloration between the two populations and am loath to distinguish an altitudinal form on a simple increase in size with increase in elevation.

Attention is called to a specimen of *T. g. toddi* from Gramalote, west of Cúcuta, Colombia, a male collected by Hermano Nicéforo Maria. This adds a new area for the Colombian range, although not an unexpected one considering the occurrence of

the form in the Mérida region of Venezuela a little to the eastward.

## SPECIMENS EXAMINED

*T. g. catharinae*.—

## BOLIVIA:

Mapiri, 1 [♂];  
Mission San Antonio, 3 ♂.

## PERÚ:

Río Inambari, 1 ♂, 1 ♀;  
Río Távares, 2 ♂;  
La Pampa, 1 ♂;  
Astillero, 2 ♂;  
Cosñipata, 1 ♂;  
Utcuyacu, 1 ♀;  
La Merced, 3 ♂, 1 ♀;  
Tulumayo, 4 ♂;  
Perené, 3 ♂, 2 ♀;  
Pozuzo, 1 ♂;  
Huachipa, 5 ♂<sup>1</sup>, 3 ♀<sup>1</sup>;  
Vista Alegre, 4 ♂<sup>1</sup>, 2 ♀<sup>1</sup>;  
Nuevo Loreto, 1 ♂;  
Chayavitas, 1 ♂;  
Río Seco, 4 ♂, 1 ♀;  
Río Negro, 1 ♂;  
Pomará, 2 ♂;  
Santa Rosa (Marañón), 1 ♂;  
Huarandosa, 6 ♂;  
San Ignacio, 4 ♂, 2 ♀.

## ECUADOR:

(Río Suno above Avila, below San José, Río Oyacachi below Chaco, Macas region, Zamora, "Ecuador," and "Napo"), 8 ♂, 6 ♀, 4 (?).

## COLOMBIA:

Buena Vista, 3 ♂, 1 ♀;  
"Bogotá," 3 [♂], 6 (?).

*T. g. parva*.—

## PERÚ:

Orosa, 1 ♂;  
Apayacu, 3 ♂, 3 ♀;  
mouth of Río Curaray, (?) 4 ♀.

## BRAZIL:

Río Negro, Mt. Curucuryari, 2 ♂ (incl. type), 2 ♀;  
São Gabriel, 3 ♂, 1 ♀;  
Yucabí, 9 ♂, 12 ♀;  
Río Uaupes, Ianarete, 1 ♂;  
Tahuapunto, 2 ♂.

## VENEZUELA:

Río Huaynia, junction with the Casiquiare, 1 ♂.

*T. g. gyrola*.—

BRITISH GUIANA: 18 ♂, 6 ♀.

FRENCH GUIANA: 2 ♂.

## VENEZUELA:

Mt. Roraima, 3 ♂, 1 ♀;  
Mt. Auyan-tepui, 4 ♂, 2 ♀, 2 (?).

*T. g. albertinae*.—

## BRAZIL:

Barão Melgaço, 3 ♂, 1 ♀;

Igarapé Assú, Pará, 1 ♂;

Prata, Pará, 1 ♂.

*T. g. viridissima*.—

TRINIDAD: 20 ♂, 9 ♀, 3(?).

## VENEZUELA:

(Cristóbal Colón, Santa Ana Valley, Campos Alegre Valley, Quebrada Seca, La Tigra, Las Linguas, San Antonio, Galipán, Río Neveri, El Guácharo, and Montaña de Guácharo), 20 ♂, 8 ♀.

*T. g. toddi*.—

## VENEZUELA:

(El Limón, La Ortiza (Tachira), and Altos de Estanques (Mérida), 2 ♂, 4 ♀.

## COLOMBIA:

Santa Marta region, 17 ♂, 5 ♀, 10 (?);  
Gramalote, 1 ♂.

*T. g. nupera*.—

## ECUADOR:

(Gualea, Canzacota, San Nicolás, below Intag, Paramba, Chimbo, Esmeraldas, Naranjo, Guainche, Bucay, Portovelo, Alamor, Cebollal, Salvias, Río Pindo, Punta Santa Ana, Río de Oro, Las Piñas, "near Quito," and "Ecuador"), 46 ♂, 20 ♀, 1 (?).

## COLOMBIA:

Ricaurte, 3 ♂.

*T. g. deleticia*.—

## COLOMBIA:

(La Frijolera, Las Lomitas, Antioquia, Andalucia, Aguadita, Gallera, Río Lima, near Honda, El Consuelo, San Antonio, Primavera, Medellín, "Western Colombia," and "Bogotá"), 18 ♂, 8 ♀, 10 (?).

*T. g. bangsi*.—

## PANAMÁ:

(Tacarcuna, Lion Hill, Cerro Montoso, Cerro Flores, Chitrá, Santa Fé, Boquete, Boqueron, Chiriquí, Sevilla Is., Afuera Is., Leones Is., and Palenque Is.), 48 ♂, 24 ♀, 3 (?).

COSTA RICA: 19 ♂, 15 ♀.

[*Tangara peruviana* (Desmarest), described ostensibly from Perú, is a south-east-Brazilian species not existing anywhere near Perú.]

*Tangara cayana cayana* (Linnaeus)

*Tangara cayana* LINNAEUS, 1766, Syst. nat., ed. 12, vol. 1, p. 315—based on "Le Tangara verd de Cayenne," Brisson.

*Fringilla autumnalis* LINNAEUS, tom. cit., p. 320—Cayenne.

*Tangara mitrata* P. L. S. MÜLLER, 1766, Natursyst., suppl., p. 159—based on "Tangara à tête rousse de Cayenne," Daubenton.

*Calliste chrysonota* SCLATER, 1850, Contrib. Ornith., p. 50-58, pl. 51—Cayenne; British Mus. ? *Calliste cyanolaima* BONAPARTE, 1851 (March), Rev. Mag. Zool., ser. 2, vol. 3, p. 140—"Pérou"; Parzudaki coll.

<sup>1</sup> Specimens in Field Museum of Natural History, Chicago.

? *Tangara cayana fulvescens* TODD, 1922 (July 12), Proc. Biol. Soc. Washington, vol. 35, p. 92—Palmar, Boyacá, Colombia; ♂; Carnegie Mus.

*Tangara cayana littoralis* GRISCOM AND GREENWAY, 1937 (May), Bull. Mus. Comp. Zool., vol. 81, p. 436—near Paramaribo, Surinam; ♂; Mus. Comp. Zool.

A series of 147 skins from Venezuela, Colombia, the Guianas, Amazonian Brazil, and Perú shows such individual variation that the tendencies toward differentiation in some parts of the range are greatly obscured. Consequently I prefer to assign all the birds, of which the males lack the dark central stripe on the under parts, to *cayana*.

In any case, the tendencies toward differentiation in color are not pronounced. The males from northern Venezuela, including the Mérida region, perhaps more often have the throat-patch a little more restricted and lilaceous in tone than those from the Guianas, northern Brazil (Rio Surumú), and the lower Amazon (Santarem), but both extremes are found in both areas. The lower Amazon (Santarem) specimens have the blue of the throat somewhat more intense than the others, but, as suggested by Griscom and Greenway, 1937 (Bull. Mus. Comp. Zool., vol. 81, p. 436), this may be due to the comparative freshness of the material from that region. In the Orinoco Valley, the resemblance is, perhaps, a little closer to the average of north-Venezuelan specimens, but still without clear-cut regularity. In color, males from Roraima and Auyan-tepui are like the Guianan series, occasionally approaching the intensity of color on the throat shown by Santarem examples.

In size there is some distinction, but it appears in a curiously broken geographical pattern. As might be expected, the birds from the mountains of Roraima, Auyan-tepui, and Mérida are at the larger end of the scale. East-Colombian and northeast-Venezuelan birds are next in size; lower Orinocan (Ciudad Bolívar) are within the range of size of the Colombian specimens but upper-Orinocan examples, though mostly like the small Guianan series, overlap the dimensions of the Mérida and Auyan-tepui birds and nearly reach the

minimum of the Roraiman series. North-Brazilian and Amazonian skins are like the Guianan in size. If a distinction is to be made on the basis of measurements, judging by the material at hand, the lower Orinoco, Mt. Roraima, Mt. Auyan-tepui, northern Venezuela, and eastern Colombia would constitute the range of the larger form, and the upper Orinoco, the Guianas, northern Brazil, and the lower Amazon would belong to the smaller form, with the upper-Orinocan population forming a connecting link, although that population is separated from the rest of the terrain occupied by the smaller birds.

The figures by which this segregation becomes evident are as follows. Adult males from the Guianas, wing, 69.5–72 mm.; northern Brazil, 70.2–72.2; Amazon, 69.8–72; upper Orinoco, 69.5–74.5; lower Orinoco, 73.5–75.2; northeastern Venezuela, 73.2–75.2; Mérida, 74.2–78; eastern Colombia, 72.5–77; Auyan-tepui, 73.8–76.2; Roraima, 75–78.5.

It would appear, therefore, that the recognition of two forms based entirely on size would result in the association of certain elements that otherwise are dissonant. The Roraima and Auyan-tepui birds probably are larger because of their altitudinal position, and the Mérida and north-Peruvian populations may be large for the same reason. Such cause could hardly be operative in the case of Ciudad Bolívar on the lower Río Orinoco in distinction from the numerous localities on the upper part of the same stream nor in that of some of the localities in northeastern Venezuela. The recognition of a large subspecies thus would necessitate selecting the different localities where the large birds occur and giving a name to their populations as though they represented a natural unit, to which concept I object.

Among the numerous apparently adult males at hand from the various localities are certain individuals that, on close inspection, show the outer primaries to be relatively dull and brownish in tone and sometimes rather abraded in contrast to most of the birds of that sex in which these feathers are distinctly blackish. Sometimes the wing is obviously in molt with the duller



feathers in process of replacement by the clearer black ones. In nearly every case, regardless of locality, the dull-feathered birds show the wing to be shorter than it is in the others. Sometimes, also, the general color is like that of the other males. I conclude, therefore, that these birds are not fully adult, and I have not included their measurements in the preceding list. It seems highly probable that "*littoralis*" was based on birds of this sort. Among seven examples from Dutch Guiana, one fully adult male from the type locality has the wing 72 mm. in length; three males (with the evidences of immaturity mentioned above; one is possibly a female) measure 67, 68.2, and 69 mm., respectively; and two females measure, respectively, 67 and 68.6. In this particular there is good agreement with birds from French and British Guiana and no evidence that individuals from near Paramaribo are smaller than those from, say, as far inland as Quonga, British Guiana.

Another interesting point concerns the name "*cyanolaima*." Bonaparte (*loc. cit.*) gave this name to a bird said, without other details, to have come from Perú. Sclater (1857, "Monograph of the . . . genus *Calliste*," p. 43) supplied the information that he believed Bonaparte to have obtained his birds from M. Parzudaki from whom, also, Sclater obtained certain specimens of the same form. Sclater, however, gives the locality as "Rio Negro." In an earlier paper (1856, Proc. Zool. Soc. London, p. 252), Sclater gives the range of the form (with name emended to "*cyanolaema*") as "Interior of Venezuela, Rio Negro; Trinidad (?)," without explanation.

It has generally been accepted that Parzudaki's birds were from the Rio Negro in Brazil, although no more recent collections from that stream have ever produced another example. Nevertheless, Taczanowski (1884, Ornith. Pérou, vol. 2, p. 463) assigns a Moyobamba bird (or birds) to "*cyanolaema*," accredited to Sclater. One of Parzudaki's specimens, formerly in Sclater's possession, is before me. It is sexed as a female but may possibly be a subadult male, and is given the locality,

simply, "Rio Negro" on one of Sclater's labels. It has the wing 74.8 mm. in length, larger than any bird of either sex from the Guianas, northern Brazil, or the Amazon but agreeing in size with the smaller males or larger females of the larger populations discussed earlier. In addition, I have an undoubted female collected by Harry Watkins near Moyobamba, on the Río Negro in northern Perú, having the wing 74 mm. in length. This specimen naturally raises the question as to whether Parzudaki's birds also may not have come from the Río Negro of Perú, not from Brazil. Bonaparte is unequivocal in his ascription of Parzudaki's specimens to Perú, and it is probable that he had his information from Parzudaki himself, in Paris. The region around Moyobamba was visited by collectors before 1851, and birds from that region could have found their way into Parzudaki's hands, and thence into Bonaparte's, with ease. (See account of *T. x. xanthogastra*.)

With only these two examples at hand from Perú, I am, of course, unable to express a positive opinion as to the validity of "*cyanolaima*." The males were said to have the blue of the throat and other colors more intense than those of typical *cayana*, in addition to being decidedly larger. The larger size is obvious in the two specimens before me, but the value of this character is lessened by the variation shown in parts of the range of *cayana* outside of the Guianas. It seems best, therefore, to leave "*cyanolaima*" in abeyance until adult males from Perú are available for study. In the meantime, I suggest that the type locality of "*cyanolaima*" be maintained as "Rio Negro, Perú."

The question of the validity of "*fulvescens*" I am likewise unable to determine to my satisfaction. The original description asserts its distinction from birds from both sides of the eastern Andes of Colombia, presumably including "Bogotá-skins." Hellmayr (1936, Field Mus. Nat. Hist. Publ., zool. ser., vol. 13, pt. 9, p. 160) broadens the concept to include all Colombian birds and the Mérida and north-Venezuelan populations also. Certainly, the single "Bogotá" male at hand cannot

be distinguished from Mérida examples, except that one of them is rather small (wing, 72.5). A male from Pueblo Nuevo, Santander, virtually topotypical of "*fulvescens*," is not distinct enough from the rest of the general series to demonstrate a separate subspecific identity.

For these reasons, therefore, I prefer to apply the subspecific name *cayana* to the entire population in which the male lacks the blackish median under parts.

It may be of interest to record a specimen received in the flesh from the zoological gardens. It is outstanding in the extent and brilliance of the lilaceous blue wash of the entire under parts except the under tail-coverts, most prominent, of course, on the throat, and with a more delicate blue wash of the same color over the entire upper parts behind the head. The wing measures 72.1 mm. Although the size places the bird among the smaller members of the subspecies, the color is nearest that of the larger ones, particularly some from northeastern Venezuela and Mérida, none of which, however, are so handsomely attired.

A further point of interest concerns two examples of the subspecies *flava*. Both are labeled "Taboga," although both are typical "Bahia-skins." It will be remembered that Dr. Chapman, in his study of *Zonotrichia capensis* (1940, Bull. Amer. Mus. Nat. Hist., vol. 77, pp. 410-411, fig. 6), discussed a specimen of that species with a similar label—a bird which he was unable to assign to a definite subspecies and which he thought might have come from the Island of Taboga, Panamá, as the ostensible locality would seem to indicate. I have since found a specimen of *Tanagra musica*, probably *T. m. intermedia* and apparently a "Bogotá" trade-skin, similarly labeled "Taboga" in the same handwriting on a similar label. Evidently all these various specimens, and probably others, are dealers' specimens from the establishment of Edward Bartlett, with the localities added in London but not by the collectors in the field. Still other specimens from other localities and other collectors have the same kind of label though with other data. It is useless,

therefore, to attempt to establish the place of origin of these different "Taboga" birds unless the preparation of the skin is of such a nature as to indicate its source.

#### SPECIMENS EXAMINED

##### *T. c. cayana*.—

##### DUTCH GUIANA:

- near Paramaribo, 3 ♂, 1 ♀;
- "interior," 1 ♀;
- Kwata, 1 ♀;
- "Surinam," 1 ♂.

##### FRENCH GUIANA:

- Cayenne, 1 ♂, 9 ♀;
- "Cayenne," 1 ♂;
- Isle Le Père, 1 ♀.

##### BRITISH GUIANA:

- Quonga, 2 ♂;
- "Demerara," 1 ♂.

##### BRAZIL:

- Frechal, Rio Surumú, 2 ♂, 1 ♀;
- Santarem, 8 ♂, 2 ♀;
- Humaythá, 2 ♀.

##### VENEZUELA:

- Mt. Roraima, Paulo, 2 ♂, 3 ♀;
- Arabupú, 3 ♂, 3 ♀;
- Philipp Camp, 1 ♂;
- Mt. Auyan-tepui, 5 ♂, 5 ♀;
- Kukenam, Rio Weiling, 1 ♀;
- Ciudad Bolívar, 7 ♂, 5 ♀;
- Agua Salada de Ciudad Bolívar, 1 ♀;
- Altagracia, 1 ♂, 2 ♀;
- Maipures, 6 ♂, 5 ♀;
- Maripa, 7 ♂, 3 ♀;
- Caicara, 2 ♂;
- San Fernando de Atabapo, 1 ♂;
- Ayacucho, 1 ♂, 1 ♀;
- "Orinoco-skin," 1 ♂;
- Cumanacoa, La Florida, 1 ♀;
- Campos Alegre Valley, 3 ♂;
- Quebrada Seca, 1 ♂, 1 ♀;
- San Antonio, 3 ♂, 3 ♀;
- Santa Ana Valley, 1 ♂;
- La Latal, 1 ♂;
- Cocallar, 1 ♂;
- Carabobo, Las Trincheras, 1 ♀;
- Mérida, 4 ♂, 7 ♀;
- El Valle (Mérida), 4 ♂, 7 ♀.

##### COLOMBIA:

- Barrigon, Rio Meta, 1 ♂;
- Villavicencio, 1 ♀;
- "Bogotá," 1 ♂, 5 ♀;
- Pueblo Nuevo, Santander, 1 ♂.

##### PERÚ:

- Rio Negro, 1 ♀;
- "Rio Negro" (probably Perú), 1 ♀.

##### *T. c. flava*.—

##### BRAZIL:

- Pernambuco, São Lourenço, 2 ♂;
- Bahia, Bahia, 14 ♂, 6 ♀, 3 (?);
- "Bahia-skin," 3 ♂, 1 ♀;
- (no locality), 3 ♂;
- "Taboga" (= "Bahia-skins"), 2 ♀.

*T. c. sincipitalis*.—

## BRAZIL:

Goyaz, 3 ♂, 1 ♀.

*T. c. chloroptera*.—

## BRAZIL:

São Paulo, Victoria, 3 ♂;  
Campinas, 1 ♂, 1 ♀;  
Rio de Janeiro, Monte Serrat, 1 ♂;  
Bemfica, 1 ♀.

*T. c. margaritae*.—

## BRAZIL:

Matto Grosso, Chapada, 35 ♂, 30 ♀;  
Uturity, 1 ♂.

**Tangara nigroviridis berlepschi**  
(Taczanowski)

*Calliste nigroviridis Berlepschi* TACZANOWSKI, 1884, Ornith. Pérou, vol. 2, p. 469—Auquimarca, Tambillo, and Cosñipata, Perú; type from Tambillo formerly in Warsaw Mus., now lost.

Specimens from extreme southern Perú and Bolivia are a little smaller than the few I have from central and northern Perú, but I can find no distinctions in color. The southern examples show the following measurements: ♂, wing, 65.5–70 mm. (average, 68.2); tail, 41.2–48 (average, 44.7); ♀, wing, 64–67.1 (average, 65.8); tail, 40.5–49 (average, 43.3). Northern and central-Peruvian birds: ♂, wing, 71–75 (average, 72); tail, 47–48 (average, 47.3); ♀, wing, 68.1–71 (average, 69.5); tail, 46–48 (average, 47). The distinction in the length of the tail is only in the average measurement. It seems of doubtful value to attempt a taxonomic division on this basis alone and I prefer to assign all of the series to *berlepschi*.

*T. n. consobrina* comes very close to the Peruvian boundary of southern Ecuador, at Alamor, but has not yet been found on the Peruvian side of the line. It is found over most of Colombia, being absent from the Santa Marta region and being replaced on the eastern side of the eastern Andes by *T. n. nigroviridis*, but a single specimen (without given sex) from Gramalote, Norte de Santander (among material submitted for examination by Hermano Nicéforo Maria of Cúcuta) is rather certainly *T. n. cyanesens*, the Venezuelan form.

Peruvian records of *berlepschi* are from Tambillo, Auquimarca, Garita del Sol, Chanchamayo, Huadquiña, Santa Ana, Cosñipata, Huaynapata, and Marcapata.

## SPECIMENS EXAMINED

*T. n. berlepschi*.—

## BOLIVIA:

Yungas, Cochabamba, 5 ♂, 1 ♀.

## PERÚ:

Santo Domingo, 7 ♂, 6 ♀;  
Inca Mine, 2 ♂, 1 ♀;  
Idma, 2 ♂, 1 ♀;  
Chilpes, 1 ♂;  
Cushi Libertad, 1 ♂;  
Chachapoyas, 1 ♂, 1 ♀;  
Chaupe, 1 ♂, 1 ♀;  
Uchco, 1 ♂.

*T. n. consobrina*.—

## ECUADOR:

(Gualea, Chivinda, "Quito," Zaruma, Alamor, Nanegal, Intag, Mindo, Canzacota, El Chiral, San Bartolo, Punta Santa Ana, Chitoque, and "Ecuador"), 17 ♂, 8 ♀, 7 (?).

## COLOMBIA:

(Gallera, Subia, Paramillo Trail, Medellín, San Antonio, Aguadita, El Roble, Santa Elena, Fusugasugá, Cocal, Antioquia, and "Bogotá"), 12 ♂, 8 ♀, 4 (?).

*T. n. nigroviridis*.—

## COLOMBIA:

"Bogotá," 11 (?).

## ECUADOR:

Baeza, 5 ♂, 3 ♀.

*T. n. cyanesens*.—

## COLOMBIA:

Gramalote, 1 (?)<sup>1</sup>.

## VENEZUELA:

(Mérida, Escorial, Valle, "Montañas Sierra," Culata, Bucarito (Tocuyo), Caracas, Colonia Továr, Junquito, Gálipan, Cumbre de Valencia, and "Venezuela"), 14 ♂, 11 ♀, 10 (?).

**Tangara vassorii vassorii** (Boissonneau)

*Tanagra (Euphonia?) Vassorii* BOISSONNEAU, 1840, Rev. Zool., vol. 3, p. 4—Bogotá, Colombia.

*Tanagra (aglaia) diva* LESSON, 1844 (July 11), Echo du Monde Sav., 2d sem., no. 3, p. 57—"probablement de la Colombie"; coll. Dr. Abeillé, Bordeaux.

I can find no distinctions of size or color in birds throughout the range of the subspecies, from northwestern Perú to western Venezuela. The extent of black around the eye and on the chin and forehead appears to be variable but without taxonomic significance.

Peruvian records are from Tambillo and Paucal.

**Tangara vassorii branickii** (Taczanowski)

*Diva branickii* TACZANOWSKI, 1882, Proc. Zool. Soc. London, p. 10, pl. 1, fig. 2—Tamia-pampa, Perú; ♂; Warsaw Mus.

<sup>1</sup> Specimen in Cúcuta Museum, Colombia.

The present form is almost restricted to the highlands above the Utcubamba Valley, but has been reported from one locality farther south, on the Huallaga side of the Central Andes at Compan. There is slight evidence of intergradation with *vassorii*, but one nearly adult male from San Pedro has the feathers of the head a little bluer than is shown by the rest of the series, suggesting a tendency toward transition.

Aside from the localities represented in the material at hand, there are records from Tamiapampa, Molinopampa, and Compan.

***Tangara vassorii atrocoerulea* (Tschudi)**

*P[rocopis] atrocoerulea* TSCHUDI, 1844 (May), Arch. Naturgesch., vol. 10, no. 1, p. 285—Perú (I suggest Chilpes, a locality visited by Tschudi); Mus. Neuchâtel.

The present form ranges from the upper Huallaga Valley southward to southeastern Perú and northern Bolivia. There is no positive differentiation throughout this area. The birds from Bolivia show a little greater tendency toward having the throat and breast faintly ashy in contrast to the clearer and deeper blue of the lower under parts, but the character is inconstant and overcome at both ends of the series. Likewise, the central-Peruvian birds show a more frequent fringe of blue on some of the lower mantle-feathers, but it is not always present and occurs sometimes in the Bolivian series.

I select Chilpes as restricted type locality because it is certain that the subspecies occurs there and the locality is one visited by Tschudi in his travels.

Records are from Maraynioc, Pumarmarca, Paltaypampa (of Jelski), Higos, Chanchamayo, and Puyasyacu.

SPECIMENS EXAMINED

*T. v. vassorii*.—

VENEZUELA:

(Mérida, Escorial, Valle, and "Montaña Sierra"), 4 ♂, 2 ♀.

COLOMBIA:

(El Roble, Santa Elena, Medellín, El Eden, La Florida, Santa Elena, Almaguer, Laguneta, west of Popayán, El Piñon, Río Toché, Choachi, Paramillo, and "Bogotá"), 34 ♂, 22 ♀, 2 (?).

ECUADOR:

(Mindo, Canzacota, Gualea, Milligalli,

Baeza, Intag, San Lucas, San Bartolo, upper Sumaco, Loja, Papallacta, Pallatanga, and "Quito"), 28 ♂, 14 ♀, 1 (?).

PERÚ:

El Tambo, 6 ♂, 1 ♀;  
Taulis, 4 ♂, 2 ♀;  
Chugur, 3 ♂.

*T. v. branickii*.—

PERÚ:

Chachapoyas, 1 ♂;  
Leimebamba, 1 ♀;  
Levanto, 1 ♂, 1 ♀;  
San Pedro, 4 ♂, 2 ♀;  
La Lejia, 4 ♂, 3 ♀.

*T. v. atrocoerulea*.—

PERÚ:

near Pano, 1 ♂<sup>1</sup>;  
Chilpes, 1 ♂, 2 ♀;  
Rumicruz, 5 ♂, 2 ♀;  
Garita del Sol, 1 ♂;  
Santo Domingo, 2 ♀;  
Oconeque, 1 ♂;  
Marcapata, 1 ♂.

BOLIVIA:

Cocapata, 1 ♂;  
San Cristóbal, 1 ♀;  
Incachaca, 12 ♂, 6 ♀.

***Tangara viridicollis fulvigula* (Berlepsch and Stolzmann)**

*Calospiza argentea fulvigula* BERLEPSCH AND STOLZMANN, 1906 (Sept.), Ornis, vol. 13, no. 2, p. 80—Tambillo, Perú; ♂; Frankfurt Mus.

This form finds its strongest expression on the western side of the Western Andes, although the type locality is on the eastern side. Birds from the eastern side occasionally show the throat a little more olivaceous, less warmly colored than usual, and the back a little more bluish. Two males from Lomo Santo have the throat about as in the most extreme examples of *T. v. viridicollis*, but others from the same locality are unquestionably close to the average of *fulvigula*.

On the other hand, on the other side of the Marañón, in the Central Andes near Chachapoyas, the population is closer to *viridicollis*, although one bird from Chachapoyas, itself, is sufficiently warmly colored on the throat and so little bluish on the back as to agree with some of the series of *fulvigula*. The preponderance of characters in the two regions and the fact that zonal connection is inhibited by the semiarid valley of the river support the view that

<sup>1</sup> Specimen in Field Museum of Natural History, Chicago.

the ranges of the two subspecies are best delimited by the Río Marañón, although intergradation by individual variation is complete.

Peruvian records thus assignable to *fulvigula* are those from Tambillo, Tabaconas, Huancabamba, Socota, Cutervo, and Paucal, as well as from some localities from which material has been examined in the present connection.

The specimens from Loja, Ecuador, certify to the occurrence of this form (and of the species) in eastern Ecuador, a matter considered not proven by Hellmayr (1936, Field Mus. Nat. Hist. Publ., zool. ser., vol. 13, pt. 9, p. 173, footnote 1).

***Tangara viridicollis viridicollis***  
(Taczanowski)

*P[rocnopis] argentea* (not *Tangara argentea* Lafresnaye, 1843 = *Tangara c. cyanoptera*) Tschudi, 1844 (May), Arch. Naturgesch., vol. 10, no. 1, p. 285—Perú; Mus. Neuchâtel.

*Calliste argentea viridicollis* TACZANOWSKI, 1884, Ornith. Pérou, vol. 2, p. 468—Huiro, Perú; ♂, ♀, cotypes in British Mus.

As discussed under *T. v. fulvigula*, the birds from the Central Andes of northern Perú, east of the Marañón, are best assigned to *viridicollis* instead of to *fulvigula* as has been done by various authors. Seven males from this region show, as a series, distinctly closer affiliation with south-Peruvian birds than with *fulvigula* and only one of them would be questioned individually. The females are less positive, but only one of four is close to the dullest-capped individuals of *fulvigula*.

Examples of *viridicollis* from the Urubamba Valley are larger than those from the Junín region and the more northern parts of the range (♂, wing, 75, 78 mm. as against 69.6–76), but I can find no distinctions in color.

Amongst the material at hand is one of the males originally collected by Orton at Huiro in the Urubamba Valley. Taczanowski based his form on birds from this locality in Salvin's collection, although he credits them to Whitely as collector. Salvin's specimens of this form, which eventually went to the British Museum, were collected by Orton and there is no record of any specimens of it having been

taken by Whitely. In Sclater and Salvin's report on Whitely's collection from Huiro (1876, Proc. Zool. Soc. London, pp. 15–19), the only tanager obtained at that locality was "*Tangara coelestis*" = *Thraupis episcopus major*. It is probable, therefore, that Taczanowski's citation of "Whitely" was in error. No specimens were marked as types, presumably, since the account in the "Catalogue of birds in the British Museum," (vol. 11, p. 137, 1886) does not so characterize the Orton birds from the Salvin-Godman collection. Nevertheless, the pair in the British Museum constitute the cotypes, as far as known. If the skin at hand was in Salvin's collection before it passed into Boucard's hands, whence it reached the Rothschild Collection and the American Museum of Natural History, it, too, should be considered as a cotype. Since there is no proof that Boucard did not obtain it directly from Orton or through some one other than Salvin, the matter must be left in doubt.

Records of *viridicollis* are from Chirimoto, Río Utcubamba, Molinopampa, Huayabamba [Valley], Chirimoto, Chanchamayo, Vitoc, Paltaypampa (Junín), Pumamarca, and Santa Ana.

SPECIMENS EXAMINED

*T. v. fulvigula*.—

ECUADOR:

Alamor, 2 ♂;  
Zaruma, 2 ♂;  
Punta Santa Ana, 1 ♀;  
Loja, 1 ♂, 1 ♀;  
"Ecuador," 1 [♂].

PERÚ:

Chaupe, 6 ♂, 1 ♀;  
Lomo Santo, 4 ♂, 2 ♀;  
Taulis, 2 ♂, 1 ♀;  
Seques, 4 ♂, 2 ♀;  
Chugur, 3 ♂, 1 ♀;  
Palambra, 4 ♂, 3 ♀.

*T. v. viridicollis*.—

PERÚ:

Chachapoyas, 3 ♂;  
Uchco, 3 ♂, 3 ♀;  
La Lejia, 1 ♂;  
Utcuyacu, 8 ♂, 6 ♀;  
Chilpes, 1 ♀;  
Tulumayo, 1 (?);  
Cushi Libertad, 2 ♂, 1 ♀;  
Pozuzo, 1 ♂;  
Garita del Sol, 1 ♀;  
Huacapistana, 1 ♂;

Huaro, 1 ♂;  
Idma, 2 ♂, 1 ♀.

**Tangara argyrofenges caeruleigularis**  
Carriker

*Tangara argyrophenges caeruleigularis* CAR-  
RIKER, 1935 (Oct. 25), Proc. Acad. Nat. Sci.  
Philadelphia, vol. 87, p. 357—Río Jelashte,  
Perú; ♂; Acad. Nat. Sci. Philadelphia.

I have not seen this form which is known  
from a limited area in the Huayabamba  
Valley of northern Perú. Bond and de  
Schauensee (1942, Proc. Acad. Nat. Sci.

Philadelphia, vol. 94, p. 374) have found  
that most of the characters ascribed to it  
are valueless but that there remains a  
slightly bluer hue on the gular patch in  
comparison with typical *argyrofenges*. In  
view of the broad hiatus between the known  
range of *argyrofenges* and the Huayabamba  
Valley, the recognition of *caeruleigularis* is  
probably justifiable in spite of the minor  
taxonomic characters.

The only records are from Huambo and  
the Río Jelashte.